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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/384,072	08/26/1999	R. ADRIAN BISHOP	TAN99-17	7349

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EXAMINER	
CHOW, CHARLES CHIANG	
ART UNIT	PAPER NUMBER
2685	15

DATE MAILED: 03/10/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/384,072	BISHOP ET AL.	
	Examiner	Art Unit	
	Charles Chow	2685	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *11/20/2003*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-45* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☒ Claim(s) *19-37 and 42-45* is/are allowed.

6)☒ Claim(s) *1-18, 38-41* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

Office Action for
Applicant's Amendment
(11/20/2003)

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

1. Claims 1, 7, 17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Zicker (US 6,314,286 B1).

Regarding **claim 1**, Zicker teaches a method of communication between a plurality of remote transceivers (radiotelephones 50, Fig. 2) and a network based information flow over multiple types of communication links disposed there between (network 21 of cellular communication system in Fig. 1; the communication link 54, 58 for radiotelephone 50 to base stations 40; the additional communication link 34 from controller 44 and air-to-ground communication system 48, to ground station 36, as the base station, in col. 3, line 58 to col. 4, line 4; col. 4, lines 28-39).

Zicker teaches the establing multiple simultaneous individual private short-range wireless communication links between plurality of remote transceivers and a hub (radiotelephone 50 communicating with base stations 40, hub, inside aircraft (col. 5, line 39 to col. 6, line 53) with minimal power level (col. 6, lines 45-46), for maintaining information flow for each remote transceiver (radiotelephone 50) by base stations 40.

Zicker teaches the providing at least one hardwired communication link over which data

flows are established between hub and an access unit (the hardwired link 42 from hub base stations 40 to access unit formed by controller 44 and 48 (Fig. 2, col. 5, lines 1-15).

Zicker teaches the at access unit (formed by controller 44 and air-to-ground communication system 48) supporting an aggregation of information flows over a subscription based wireless communication link between the access unit and a base station, (the controller 44 and air-to-ground communication system 48 communicating via a wireless link 34 to ground station 36, as the claimed base station, Fig. 1, col. 5, lines 16-38, to the network 21 of the the cellular system, col. 3, lines 58-63), the base station being in communication with the network (the ground station 36 communicating with network formed by PSTN 28 via link 38, Fig. 1, col. 4, lines 50-57).

Zicker does not clearly teaches the data flow in his cellular communication system, however, it is well known to the technology that a cellular communication system is capable of performing data communication in the communication link. The data flow in communication link is obvious in a cellular communication system. Therefore, it would have been obvious to one of ordinary skill in the art at the time of invention to modify Zicker, and to include the data flow in the communication link, such that the system could transmit and receive data.

Regarding **claim 7**, Zicker taught above in claim 1, a long-range wireless communication link, from controller 44 and air-ground system 48 to ground station 36.

Regarding **claim 17**, Zicker taught above in claim 1 a second type of wireless communication link from aircraft 20 to ground station 36 has a cellular range greater than 1 mile.

2. Claims 2, 3, 6, 18, 39 are rejected under 35 U.S.C. 103(a) as being unpatentable over Zick in view of O'Sullivan et al.(US 5,487,069).

Regarding **claim 2**, Zicker does not clearly teach the subchannel data transfer rate is less than the nominal data transfer rate.

O'Sullivan teaches, the making available a plurality of subchannels link for data transferring rate on each subchannel is typically less that the nominal data transfer rate of any data flow (the peer to peer wireless LAN having the capability of transmission under multipath condition between LAN and the mobile transceivers, as shown in title, abstract, Fig. 4. In Fig. 4 it shows the plurality of hub 8 in communication with mobile transceiver 9. The subchannels has a low bit rate but the total overall bit rate is high to overcomes the problems of delay time and inter symbol interference as shown in col. 7, line 66 to col. 8, line 8; The simultaneous operation of low bit rate transceivers and high bit rate transceivers is to allocate half of the available high bit channel to the low bit rate transceiver. The low bit rate transceiver utilize only half of the available bandwidth and a hub can transmit data at the low rate to two transceivers at the same time. The same hub for low bit rate and the high bit rate in col. 12, lines 16-23). O'Sullivan teaches the subchannel for low data rate and high data rate transfer, such that the system could efficiently allocate the subchannels to improve the multipath problem in the transmission path (col. 2, line 5; col. 2, line 19). Therefore, it would have been obvious to one of ordinary skill in the art at the time of invention to modify Zicker above, and to include O'Sullivan's allocating subchannel with low, high, data rate, such that the system could improve the multipath problem.

Regarding **claim 3**, O'Sullivan taught in claim 2 above for the allocating available subchannel for the high speed data transfers over two or more subchannels (hub simultaneously transmits at low rate to two transceivers, and the high overall data transferring rate among hubs 8 connected to networks for gateway 11 and ISDN 12).

Regarding **claim 6**, O'Sullivan has shown above the private wireless link supporting multiple high speed data transfer for the remote transceivers from the hubs 8 to mobile transceivers 9 using mixed high, low, data rate for the same time to communicate with the two mobile transceivers.

Regarding **claim 18**, O'Sullivan taught above in claim 2, the communication between the plurality of users and the hub is based on a wireless LAN (the peer to peer wireless LAN having the capability of transmission under multipath condition between LAN and the mobile transceivers, as shown in title, abstract, Fig. 4. In Fig. 4 it shows the plurality of hub 8 in communication with mobile transceiver 9).

Regarding claim **39**, O'Sullivan taught above for the peer to peer connectivity is supported between serves on the network and computer 7 is coupled to the remote transceiver via hub transceiver 8 (Fig. 4, col. 5, line 36 to col. 6, line 5).

3. Claims 4-5, 13, 38, 40 are rejected under 35 U.S.C. 103(a) as being unpatentable over Zicker in view of Rypinski (US 5,907,544).

Regarding **claim 4**, Zicker does not clearly teach the details for the hub is based on an IEEE 802.11 standard.

Rypinski teaches a hub is based on the IEEE 802.11 standard in the hub controller and the multiple wireless network access point (title, abstract) for data transfer between the hub and the access points 71 (Fig. 1-5). The system is based upon the IEEE 802.11 (col. 1, line 33; col. 1, line 45; col. 2, line 32), or based upon the IEEE LAN standard 802 (col. 12, line 55). Rypinske teaches a hub controller using the IEEE 802 LAN standard 802 for the system, such that the system could be popularly implemented because many equipment are adopting the IEEE 802, and also because of the already available features in the standard 802 LAN. Therefore, it would have been obvious to one of ordinary skill in the art at the time of invention to modify Zicker, and to include Rypinski's IEEE LAN standard 802 for hub controller link, such that the system could be popularly implemented according to the IEEE 802 standard, and benefited by the available features from IEEE 802 standard.

Regarding **claim 5**, Rypinski taught in claim 4, above, for the IEEE 802.3 standard as shown in Fig. 4, 802.3 for the medium access, 802.3, physical.

Regarding **claim 13,** Rypinski taught the short range infrared communication in Fig. 1, by utilizing optical radiation in the premises area rather than a wide or metropolitan area.

Regarding **claim 38**, Rypinski taught above the hard wired communication link is part of a contention network.

Regarding **claim 40**, Rypinski taught above the base station and the aggregated data flow processing control for routing the data message through the network with the service priority consideration.

4. Claims 8, 14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Zicker in view of Rai et al. (US 6,421,714 B1).

In the above it does not clearly teach the details for the subscriber-based high speed link.

Regarding **claim 8**, Rai et al. (Rai) teaches the subscriber-based wireless communication link is also a high speed wireless communication link (the wireless data network for point-to-point server for efficiently manage the mobility for internet access, title, abstract, Fig. 6). Rai shows in Fig. 6 that the remote access point 82R are connected to wireless hub 84 for communication with other end system, which is different from the end system in the trunk sectors 1-3. The remote access involving the high speed packet transferring , since the high speed feature supports the whole point-to-point network link (col. 4, line 66 to col. 5, line 17). Rai teaches a high speed feature for the point-to-point network link, such that the system certainly would be upgraded for efficiently transferring the information using the high speed feature. Therefore, it would have been obvious to one of ordinary skill in the art at the time of invention to modify Zicker, and to include Rai's high speed feature for point-to-point network link, such that the system could be upgraded to efficiently transferring the information using the high speed feature.

Regarding **claim 14,** Rai has shown above the wireless internet access system above (title, summary of invention) for the internet network.

5. Claims 9, 10, 12, 15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Zicker in view of Budin et al. (US 5,276,703).

In the above it does not clearly teach the details for the subscriber-based high speed link. Budin teaches **claim 9**, the remote transceiver (44) are operably linked to remote computer terminals (36a-c) in communication with network (local area network including hub units, subscriber stations, and a wireless communication link between each hub unit and its stations (abstract, Fig. 4). The hub 30 provide the remote computers 36a-c to be accessed by remote transceivers communicating with transceiver 44 (col. 7, lines 42-53). Besides, Budin also considered the spread spectrum (col. 21, lines 3-7); the IEEE 802.3 (col. 7, line 64 to col. 8, line 2); the 2.4 GHz link (col. 6, lines 47-58; col. 12,lines 48-53). Budin teaches the remote computers 36a-c to provide computer resource services to remote transceiver via hub units, such that the remote computer resources could be conveniently accessed by via hub. Therefore, it would have been obvious to one of ordinary skill in the art at the time of invention to modify Zicker above, and to include Budin's remote link to remote computers via hub, such that the system could be upgrade to conveniently access to resource in the remote computer.

Regarding **claims 10, 12, 15,** Budin above has taught the wireless LAN system utilizes the direct sequence spread spectrum (col. 12, line 48-53) for the short range hut wireless LAN communication to the transceivers 36c, 3d, 38c, using 2.4 GHz (col. 12, lines 48-53) over unique channel from the link means for each of said hub units and its associated station units (col. 22, lines 22-31). Budin considered the Ethernet link (Fig. 3; col. 7, line 64 to col. 8, line 2) for the wired ring IEEE 802.3 network system.

6. Claim 11 is rejected under 35 U.S.C. 103(a) as being unpatentable over Zicker in view of Jusa et al. (Us 6,031,863).

In the above it does not clearly teach the frequency hopping for the hub link, although Budin has shown the hub's communication link is using the spread spectrum direct sequence and the 2.4 GHz (claims 10, 12, 15).

Regarding **claim 11,** Jusa teaches the wireless LAN system utilizing the frequency hopping as shown in abstract, Fig. 1-9, and the hopping controllers 13a-b. Jusa's wireless LNA system periodically hops and varies the carrier frequencies (col. 4, lines 43-51) such that to avoid the overlapping collisions between cells. Jusa teaches the frequency hopping, such that the system could avoid the collision problem. Therefore, it would have been obvious to one of ordinary skill in the art at the time of invention to modify Zicker, and to include Jusa's frequency hopping for the hub wireless LAN, such that the system could avoid the collision problem.

7. Claim 16 is rejected under 35 U.S.C. 103(a) as being unpatentable over Zicker in view of Newton (Newton's Telecom Dictionary-1998).

In the above it does not clearly teach the wireless link is based on a radio frequency near 1.9 GHz, although Zicker taught above the cellular communication system and PCS system is one of the cellular communication system.

Newton teaches **claim 16**, the 1.9 GHz for personal communication network PCN is equivalently in personal communication system PCS and PCS comprises the 1900 MHz band as shown in Newton's page 567, such that the system could be upgrade for PCS system application. Therefore, it would have been obvious to one of ordinary skill in the art at the time of invention to modify Zicker, and to include Newton's PCN/PCS 1900 MHz, such that the system could also handles the PCN/PCS band signals.

8. Claim 41 is rejected under 35 U.S.C. 103(a) as being unpatentable over Zicker in view of Sopko (US 6,003,068).

In the above it does not clearly indicate the hub and access unit is portable.

Regarding **claim 41**, Sopko teaches the portable hub and access unit. Sopko teaches the portable hub 216 (title, abstract, figure in cover page) for users at computer 130 to share portable network server 120. The portable 120 has transmitter and receiver for communicating within the network system (his claims 14, 15, 1, 9). Sopko provides the solution for a portable hub with transceiver for sharing with the user's computer device for access the network resource. It would be obvious to include Sopko's portable hub with transceiver, such that the system could be operated efficiently at different places by using the portable hub setup for accessing the network resource. Therefore, it would have been obvious to one of ordinary skill in the art at the time of invention to modify Pasanen above, and to include Sopko's portable hub with transceiver, such that the system could be operated

efficiently at different places by using the portable hub setup for accessing the network resource.

Allowable Claims

9. Claims 19-37, 42-45 are allowable over the prior art of record.

10. The following is the examiner's statement for the reasons of allowance:

The prior art fails to teach singly, particularly, or in combination, the subject matter for the the method for communication data between plurality of remote transceiver and a network based on data flow over multiple communication links, for establishing a first set of wireless communication links, for transmitting the data message from plurality of remote transceivers to hub, for receiving data messages at hub and routing data messages received by hub over a hardwired link, to aggregating data messages from multiple individual logical data flows generated by computers coupled to the plurality remote transceivers, to establishing a second wireless link between subscriber unit and base station using multiple shared radio channels having multiple logical data flows reformated to include an extra physical layer for transmission of data on second wireless communication link, to stripping the extra physical layer, to routing the data message in the original from to a network in communication with base station, as shown in independent claim 19. The dependent claims are also allowable due to their dependency upon the independent claims.

The closest patent to Zicker (US 6,314,286 B1) teaches the plurality of remote transceiver 50 for the establishing a first set of wireless link with hub (base station 40), and access unit (44 and 48) for a second communication link to ground station in a wireless communication system, as shown in claim 1 above, Zicker does not teach the aggregating data from

individual logical data flow generated by computer coupled to the remote transceiver, the reformatted to include extra physical layer, the stripping the extra physical layer from the data received over the second wireless link at base station.

Other prior arts in below has been considered, but they do not teach the above claimed features.

O'Sullivan-'069 teaches the peer to peer wireless LAN having the capability of transmission under multi-path condition between LAN and the mobile transceivers (abstract, Fig. 4). The hub 8 communicates with mobile transceiver 9, having subchannels which has a low bit rate but the total overall bit rate is high in order to overcome the delay time problems and inter-symbol interference (col. 7, line 66 to col. 8, line 8).

Rypinski-'544 teaches a hub is based on the IEEE 802.11 standard in the hub controller and the multiple wireless network access point (title, abstract) for data transfer between the hub and the access points 71 (Fig. 1-5). The system is based upon the IEEE 802.11 (col. 1, line 33; col. 1, line 45; col. 2, line 32), or based upon the IEEE LAN standard 802 (col. 12, line 55). Rypinske teaches a hub controller using the IEEE 802 LAN standard 802 for the system, such that the system could be popularly implemented because many equipment are adopting the IEEE 802.

Any comments considered necessary by applicant must be submitter no later than the payment of the issue fee, and to avoid processing delays, should preferably accompany the issue fee. Such submission should be clearly labeled "comments on statement of reasons for allowance".

Response to Arguments

11. Applicant's arguments with respect to claims 1-18, 38-41 have been considered but are moot in view of the new ground(s) of rejection.

Regarding applicant's argument based upon the no teachings for the on teachings for the multiple simultaneous individual short range wireless communication link, the access unit supporting aggregation of data flows over subscription based wireless communication link between access unit and base station, the ground of rejection has been changed to include Zicker (US 6,314,286 B1). Zicker teaches the claimed features in claim 1 as shown in claim 1 above.

In view of the cited references, claims 1-18, 38-41 are remaining in the rejection manner.

Conclusion

12. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Charles Chow whose telephone number is (703)-306-5615.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Daniel Hunter, can be reached at (703)-308-6732.

Any response to this action should be mailed to:

Commissioner of Patents and Trademarks

Washington, D.C. 20231

or faxed to: (703) 872-9314 (for Technology Center 2600 only)

Hand-delivered responses should be brought to Crystal Park II, 2121 Crystal Drive, Arlington, VA, Sixth Floor (Receptionist).

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Technology Center 2600 Customer Service Office whose telephone number is (703) 306-0377.

Charles Chow C.C.

February 20, 2004.

EDWARD F. URBAN
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2600